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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT P. FREESE, THOMAS A. RINEHART,
and ROBERT L. WOOD

Appeal 2009-012417
Application 10/661,917
Technology Center 1700

Decided: June 11, 2010

Before TERRY J. OWENS, PETER F. KRATZ, and MARK NAGUMO, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 3-13 and 15-18, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a method for fabricating an array of microlenses. Claim 1 is illustrative:

> 1. A method of fabricating an array of microlenses comprising:
>
> scanning a radiation beam at varying amplitude through a substrate that is transparent thereto into a negative photoresist layer on the substrate to image the array of microlenses in the negative photoresist layer.

The References

Adler	4,087,300	May 2, 1978
Kodera	4,965,118	Oct. 23, 1990
Georger	5,342,737	Aug. 30, 1994
McCullough	6,292,255 B1	Sep. 18, 2001
Raguin	6,410,213 B1	Jun. 25, 2002

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1, 3-10 and 15-18 over Kodera in view of McCullough and Raguin, and claims 11-13 over Kodera in view of McCullough, Raguin, Adler and Georger.

OPINION

We reverse the rejections.

Issue

Have the Appellants indicated reversible error in the Examiner's determination that the combined disclosures of Kodera, McCullough and Raguin would have rendered prima facie obvious, to one of ordinary skill in

the art, a method for fabricating an array of microlenses comprising scanning a radiation beam at varying amplitude though a substrate?[1]

Findings of Fact

Kodera discloses a method for making a flexible optical disk (col. 8, ll. 32-33). A supporting layer having an uneven surface is formed by painting an ultraviolet ray hardening or electron ray hardening resin liquid (140) onto an uneven surface of a resin mold (130), coating the resin liquid (140) with a transparent supporting layer (210), irradiating the resin liquid (140) through the transparent supporting layer (210) with ultraviolet or electron rays (150) while using rollers (220) to apply pressure to the transparent supporting layer (210), thereby hardening the resin liquid (140) and integrating it with the transparent supporting layer (210), and disconnecting the integrated layer from the resin mold (130) to form an integrated supporting layer having an uneven surface (col. 8, ll. 33-46, 54-56; Fig. 5). An optical disk is formed by applying a reflection layer (120) to the uneven surface of the integrated supporting layer (210/110 in Fig. 4B) and covering the reflection layer (120) with a protective layer (220) (col. 8, ll. 22-26).

McCullough discloses (col. 2, ll. 5-13)

> an apparatus and method for reducing linewidth variation in the direction of a scanning rectangular slit illumination field of an image reproduced from a reticle. Variations in linewidth produced along the axes or direction of scan whatever their cause may be is [sic] compensated for by adjusting the dose or exposure by a predetermined amount as a function of distance in the scanning direction, thereby

[1] The Examiner does not rely upon Adler or Georger for any disclosure that remedies the deficiency in Kodera, McCullough and Raguin as to the above-stated issue (Ans. 6-8). We therefore do not further discuss Adler or Georger.

obtaining a controlled or reduced linewidth variation along the scan direction.

Raguin discloses a method for producing micro-optical structures such as lenses and gratings having arbitrary surface relief profiles by exposing photosensitive material to a spatially variable dose of electromagnetic energy to create a surface relief structure upon development of the photosensitive material (col. 1, ll. 6-10; col. 6, ll. 32-35). The method requires conducting experiments to determine electromagnetic energy dose response curves of each specific photosensitive material which provide data for use in determining the proper exposure dose and development procedure to fabricate the desired microstructures from that photosensitive material (col. 1, ll. 11-13; col. 16, ll. 55-60; col. 17, ll. 12-16).

Analysis

The Appellants argue that in Kodera's method there is no reason for scanning a radiation beam at varying amplitude because Kodera's patterning is by molding a resin onto a patterned mold surface and hardening the molded resin by flooding it with radiation (Br. 7).

The Examiner argues that Kodera discloses scanning in Figures 16A and 16B (Ans. 8-9).

The laser beam (501) in Kodera's Figures 16A and 16B is used to read out information from an optical disk after it has been produced, not to harden the resin used to make the optical disk (col. 20, ll. 37-42).

The Appellants argue that "although McCullough teaches varying an amplitude of a scanned laser, it does so for totally different reasons in a totally different context" (Br. 8).

The Examiner argues that "it would be obvious to a skilled artisan to modify Kodera by employing the method of varying the intensity of the exposure light during scan exposure by varying the amplitude of the illumination beam as taught by McCullough because McCullough, in col 6, lines 1-17, discloses that a predetermined amount of exposure dose can be obtained by varying the amplitude of the illumination beam during the scan exposure" (Ans. 5-6).

Establishing a prima facie case of obviousness of an invention comprising a combination of known elements requires "an apparent reason to combine the known elements in the fashion claimed." *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). McCullough adjusts the radiation dose or exposure to control or reduce semiconductor device linewidth variation along the scan direction (col. 1, ll. 15-19; col. 2, ll. 5-13). The Examiner's reason for combining Kodera and McCullough, i.e., that McCullough "discloses that a predetermined amount of exposure dose can be obtained by varying the amplitude of the illumination beam during the scan exposure" (Ans. 5-6) does not provide the required apparent reason as to why one of ordinary skill in the art would have desired to use, in Kodera's method wherein a pattern is provided in an optical information recording medium by a patterned mold (col. 8, ll. 33-48), McCullough's radiation dose exposure control for reducing linewidth variation in a semiconductor device (col. 2, ll. 8-13). "'[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977,

988 (Fed. Cir. 2006)). The Examiner has not provided the required articulated reasoning with rational underpinning.

Conclusion of Law

The Appellants have indicated reversible error in the Examiner's determination that the combined disclosures of Kodera, McCullough and Raguin would have rendered prima facie obvious, to one of ordinary skill in the art, a method for fabricating an array of microlenses comprising scanning a radiation beam at varying amplitude though a substrate.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 1, 3-10 and 15-18 over Kodera in view of McCullough and Raguin, and claims 11-13 over Kodera in view of McCullough, Raguin, Adler and Georger are reversed.

It is ordered that the Examiner's decision is reversed.

REVERSED

kmm

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